Dendrimer nanotechnology for personalized nanomedicine

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Abstract

Nanotechnology is widely expected to bring breakthroughs in specific delivery of the right therapeutic agent to the right patient at the right disease lesion.[1] Dendrimers are ideal nanocarriers for drug delivery by virtue of their uniquely well-defined structures and multivalent cooperativity confined within a nanosized volume per se.[2] We have established bioinspired structurally flexible and self-assembling supramolecular dendrimers for drug delivery.[3-6] These dendrimers are excellent nanocarriers for personalized medicine: they are able to form modular, responsive and adaptive nanosystems, and effectively deliver various chemo- and bio-therapeutics as well as imaging agents for precise diagnosis and personalized treatment in various disease's models. These studies have offered new perspectives in dendrimer nanotechnology based biomedical applications.

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Biography

Dr Ling Peng is a leading expert in developing functional dendrimer nanosystems for drug delivery in biomedical applications. She has successfully established bio-inspired structurally flexible and self-assembling dendrimer nanosystems for drug and nucleic acid delivery. One of the dendrimers developed by her team has been scheduled in clinical trials. Dr Peng has coordinated and participated in different European projects and actively involved in several European COST Actions and networks. She is currently a research director at the French National Scientific Research Center (CNRS), and a principle investigator at the Centre Interdisciplinaire de Nanoscience de Marseille (CINaM). Her research team has been labelled by La Ligue contre Le Cancer in France for the period of 2016-2020, and she was awarded for the Prize of Dr and Mrs Henri Labbé by the French Academy of Sciences in 2017.